STATE OF NEW HAMPSHIRE
DEPARTMENT of RESOURCES and ECONOMIC DEVELOPMENT
DIVISION of FORESTS and LANDS
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STEPHEN K. RICE
Commissioner

JOHN E. SARGENT
Director

December 6, 1993

Dear Margaret:

Enclosed are New Hampshire's Forest Health Worksheets and accompanying maps of gypsy moth defoliation. I put the pest information on both the new worksheet form and the old, just to see which one I preferred. The new format was easier to fill out and more understandable.

If you have any questions about the worksheets, or Bob has any about the maps, please call (603) 271-3629.

Sincerely,

Jennifer Bofinger
Forest Technician III

enc.

1993 Forest Health Conditions Report
New Hampshire

The general condition of New Hampshire's forests is healthy. The 1993 growing season was drier than normal. Drought in concert with other factors put additional stress on the trees.

The data taken on the Forest Health Monitoring plots and the North American Sugar Maple Plots suggested good tree conditions in the state. Probably the most significant event this season was 10,000 acres of moderate and heavy gypsy moth defoliation. Gypsy moth defoliation was concentrated in the southeastern part of the state. This was the second consecutive year of decline in acreage defoliated by gypsy moth. Sampling through egg mass counts also indicated a decreasing population. Egg mass per acre for all areas with defoliation averaged 514 em/ac in 1993, as compared to 836 em/ac in 1992.

There was a scattered occurrence of red oak mortality in areas that had experienced multiple years of heavy gypsy moth defoliation. The area of this mortality was not quantified and is expected to expand next year.

There were 40 acres of new, light hemlock looper defoliation in 1993. The hemlocks that had been heavily defoliated on the Impact Plot study sites in 1990 and 1991 are steadily recovering. Population sampling indicated negligible levels of this insect. Although Lambdina athesaria is the species responsible for the most defoliation, Lambdina fiscellaria is also present in New Hampshire.

In 1993 New Hampshire expanded its survey for Hemlock Woolly Adelgid. Beyond the established survey sites, which are visited to find the presence of this insect, the seacoast was targeted for observation. This was done in case hurricane winds had brought the insect up from Massachusetts. No sign of HWA was found.

Spruce budworm pheromone traps were put out in 1993 and fewer moths were caught than in 1992. The number of moths caught is still negligible.

In the late winter/early spring of 1993 many red spruce in New Hampshire's higher elevations experienced browned needles due to rapid swings in temperature extremes. The buds which produced this year's growth were not damaged.

Due to more frequent snowfall this season, increased amounts of salt were used to keep road surfaces cleared. As a result, white pine and other species along roadsides experienced heavier salt damage.

There was very light pear thrip damage on some sugar maple in the western part of the state, Sullivan and Cheshire Counties. Early in the summer american beech was found to be in severe decline at scattered sites from Grafton County to Strafford County, possible attributed to weather conditions. There were also occurrences of anthracnose from Grafton to Rockingham county.

Most of the insect trends are down or at stable endemic levels. We are not expecting any major outbreaks to occur next season.

1993 NEW HAMPSHIRE

FOREST HEALTH WORKSHEET

Damage (circle) 1/

- (Defoliation)
- Mortality
- Dieback/Decline
- Branch Breakage
- Mainstem Broken or Uprooted
- Discoloration
- Present but Below Threshold
- Healthy (optional)

Forest Type (circle)

- White/red/jack pine
- Eastern spruce/fir
- Longleaf/slash pine
- Loblolly/shortleaf pine
- (Oak/pine)
- (Oak/hickory)
- Oak/gum/cypress
- Elm/ash/red maple
- Maple/beech/birch
- Aspen/birch
- Urban/ornamental
- Nursery

Principal Host: NORTHERN RED OAK

Secondary Host: WHITE OAK

Tertiary Host:

Survey Type (circle)

- Aerial sketchmapping
- (Ground)
- Photo
- Other
- Trapping

Damage Causing Agent: GYPSY MOTH

Scientific Name: LYMANTRIA DISPAR

County(s) Affected	Damage Acres or No. of Trees	Class 2/
BELKNAP	950 ACRES	1
HILLSBOROUGH	1535 ACRES	1
ROCKINGHAM	4660 ACRES	1
STRAFFORD	2930 ACRES	1

Comments (trend/treatment)

No treatment recommended. The trend is down, declining population.

1993 = 514 em/ac.
1992 = 836 em/ac.

1/ Do not list "Statewide".

2/ See back of form for damage class instructions.

1993 NEW HAMPSHIRE

FOREST HEALTH WORKSHEET

Damage (circle) 1/

- Defoliation
- Mortality
- Dieback/Decline
- Branch Breakage
- Mainstem Broken or Uprooted
- Discoloration
- Present but Below Threshold
- Healthy (optional)

Forest Type (circle)

- White/red/jack pine
- Eastern spruce/fir
- Longleaf/slash pine
- Loblolly/shortleaf pine
- Oak/pine
- Oak/hickory
- Oak/gum/cypress
- Elm/ash/red maple
- Maple/beech/birch
- Aspen/birch
- Urban/ornamental
- Nursery

Principal Host: EASTERN HEMLOCK

Secondary Host:

Tertiary Host:

Survey Type (circle)

- Aerial sketchmapping
- Ground
- Photo
- Other
- Trapping

Damage Causing Agent: HEMLOCK LOOPER

Scientific Name: LAMBDINA ATHESARIA

County(s) Affected	Damage Acres or No. of Trees	Class 2/
CHESHIRE	40 ACRES	

Comments (trend/treatment)

<50% damage on >30% canopy area. This feeding was light and therefore below threshold.

Mostly mature trees affected.

This population is continuing to decline. No treatment recommended.

1/ Do not list "Statewide".

2/ See back of form for damage class instructions.

1993 NEW HAMPSHIRE

FOREST HEALTH WORKSHEET

Damage (circle) 1/

- Defoliation
- Mortality
- Dieback/Decline
- Branch Breakage
- Mainstem Broken or Uprooted
- Discoloration
- Present but Below Threshold
- Healthy (optional)

Forest Type (circle)

- White/red/jack pine
- Eastern spruce/fir
- Longleaf/slash pine
- Loblolly/shortleaf pine
- Oak/pine
- Oak/hickory
- Oak/gum/cypress
- Elm/[illegible]/red maple
- Maple/beech/birch
- Aspen/birch
- Urban/ornamental
- Nursery

Principal Host: SUGAR MAPLE

Secondary Host:

Tertiary Host:

Survey Type (circle)

- Aerial sketchmapping
- Ground
- Photo
- Other
- Trapping

Damage Causing Agent: PEAR THRIP

Scientific Name: TAENIOTHRIPS INCONSEQUENS

County(s) Affected	Damage Acres or No. of Trees	Class 2/
CHESHIRE	5 ACRES	
SULLIVAN	5 ACRES	

Comments (trend/treatment)

Light damage to sugar maple on one NAMP plot and one FHM plot.

No class reported because below threshold.

No treatment recommended.

1/ Do not list "Statewide".

2/ See back of form for damage class instructions.

1993

NEW HAMPSHIRE

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
NORTHERN HARDWOODS	10 ACRES	Light <30%

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT PEAR THRIP

SCIENTIFIC NAME TAENIOTHRIPS INCONSEQUENS

SPECIFIC TREE SPECIES AFFECTED SUGAR MAPLE

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

MATURE

SURVEY METHOD

GROUND SURVEY - FHM + NAMP

TREATMENT (if any)

None Recommended.

TREND (Past and future)

PAST POP. levels were down. Possibly population is increasing.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY X **TOWNSHIP**

Sullivan - 5 ac.	Acworth
Cheshire - 5 ac	Alstead.

(If needed, continue on reverse side)

COMMENTS

1993. NEW HAMPSHIRE

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
White-red-Jack Pine	40	LIGHT <30% def. crowns.

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT HEMLOCK LOOPER

SCIENTIFIC NAME LAMBDINA ATHESARIA

SPECIFIC TREE SPECIES AFFECTED HEMLOCK

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

Mostly MATURE

SURVEY METHOD

GROUND SURVEY

TREATMENT (if any)

None recommended.

TREND (Past and future)

This population continues to decrease.

LOCATION **MAP ENCLOSED** _____ **TAPE ENCLOSED** _____

STATEWIDE _____ **OR:**

COUNTY X **TOWNSHIP** _____

Cheshire = 40 acres

Pisgah State Park.

(If needed, continue on reverse side)

COMMENTS

1993 New Hampshire.

FOREST HEALTH WORKSHEET

AFFECTED FOREST TYPES*/OTHER**	ACRES/AREA AFFECTED	SEVERITY/PATTERN (Define classes)
OAK-PINE + OAK-HICKORY	10,075 acres	MOD. + HEAVY
		MOD = 30% - 60% def. HEAVY = 60% + "

*Forest Type Group - White-Red-Jack Pine, Spruce-Fir, Hard Pine, Oak-Pine, Oak Hickory, Oak-Gum-Cypress, Elm-Ash-Cottonwood, Northern Hardwood, Aspen-Birch.

**Other - Urban-Ornamental, Nursery, Plantation.

DAMAGE

DAMAGE CAUSING AGENT GYPSY MOTH

SCIENTIFIC NAME LYMANTRIA DISPAR

SPECIFIC TREE SPECIES AFFECTED Northern Red Oak, White oak.

AGE OF AFFECTED TREES (understory, pole, mature, regeneration)

mostly: Pole + Mature

SURVEY METHOD

GROUND SURVEY

TREATMENT (if any)

none recommended.

TREND (Past and future)

GYPSY MOTH POPULATIONS CONTINUE TO DECREASE.

LOCATION MAP ENCLOSED X TAPE ENCLOSED _____

STATEWIDE _____ OR:

COUNTY X TOWNSHIP _____

BELKNAP = 950ac. _____

HILLSBOROUGH = 1535ac. _____

ROCKINGHAM = 4660 ac. _____

STRAFFORD = 2930 ac. _____

(If needed, continue on reverse side)

COMMENTS